MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2015/2016

TIS 2351 / THI 3461 – HUMAN COMPUTER INTERACTION
(All sections / Groups)

17 October 2015
02:30 p.m. – 04:30 p.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of 9 pages with 4 Sections only.

2. Attempt **ALL** questions in **SECTION A, SECTION B, SECTION C** and **SECTION D**. The distribution of the marks for each question is given.

3. Please write all your answers in the answer box associated with each question in this question paper.

Section A: Answer all questions.

Indicate whether each statement is TRUE or FALSE.

(10 marks)

Answer

1) One main aim of interaction design is to reduce positive aspects (e.g. enjoyment, engagement) of the user experience while enhancing the negative ones (e.g. frustration, annoyance).

2) A paradigm refers to a general approach that has been adopted by a community of researchers and designers for carrying out their work, in terms of shared assumptions, concepts, values and practices.

3) Memory involves recalling various kind of knowledge that allow human to act appropriately.

4) Well-designed interfaces can elicit good feelings in people.

5) Command line interfaces require the user to type in commands that are typically abbreviations at the prompt symbol appearing on the computer display.

6) All data gathering sessions should have ambiguous goals.

7) Nvivo is a popular qualitative data analysis package that supports the annotation and coding of data including documents, photos, video and audio files.

8) User-centered design rests on three principles: early focus on users and tasks, empirical measurement and iterative design.

9) Direct observation involves breaking a task down into subtasks and then into further subtasks.

10) Conceptual model provides a checklist to help you plan your evaluation studies.

Continued...

Section B: Answer all questions.

Read the scenario below and identify the choice that best completes the statement or answers the question.

A usability consultant joins a group who has been given GPS-based phones to test on a visit to Kuala Lumpur. Not knowing the restaurants in the area, they use the GPS-based phone to find a list of restaurants within a five-mile radius of their hotel. Several are listed and while the group waits for a taxi, they find the telephone numbers of a couple, call them to ask about their menus, select one, make a booking, and head off to the restaurant. The usability consultant observes some problems keying instructions because the buttons seem small. The usability consultant also notices that the text on the screen seems rather small, but the person using it is able to get the information needed and call the restaurant. Discussion with the group supports the usability consultant's impression that there are problems with the interface, but the group is pleased to get a table at a good restaurant nearby.

(10 marks)

Answer

1) Which of the following data gathering technique is used in the scenario?
    A. Direct observation in the field.
    B. Direct observation in controlled environments.
    C. Diaries.
    D. None of the above.

2) Who are the primary users in the scenario?
    A. Tourists.
    B. Mobile developers.
    C. Project sponsors.
    D. None of the above.

3) Which of the following data recording is more suitable for the scenario?
    A. Audio recording.
    B. Paper and pencil.
    C. Video recording.
    D. None of the above.

4) The following are advantages of data gathering technique used in the scenario EXCEPT
     A. The observer saw how the device could be used in a real situation.
     B. The observer gained an understanding of what the group liked and what was lacking.
     C. The observer can be more objective.
     D. All of the above.

5) Which of the following is an indication for having done enough observation in the scenario?
     A. When observer starts to see similar patterns of behavior being repeated.
     B. When observer has listened to all the main stakeholder groups and understands their perspectives.
     C. When observer stops learning new things.
     D. All of the above.

6) An observer who adopts an approach right at the 'outsider' end of the spectrum is called a
     A. Participant observer.
     B. Passive observer.
     C. Insider.
     D. All of the above.

7) What kind of data is gathered in the scenario?
     A. Mostly qualitative.
     B. Mostly quantitative.
     C. Both qualitative and quantitative.
     D. None of the above.

8) Which of the following is a qualitative analysis?
     A. Looking for critical incidents.
     B. Producing graphical representation.
     C. Calculating averages.
     D. None of the above.

9) Which of the following is a quantitative analysis?
     A. Categorizing data.
     B. Calculating percentages.
     C. Indentifying recurring patterns or themes.
     D. None of the above.

Continued...

10) Which of the following is a presentation style for usability [＿＿＿] consultant to present the finding?
   A. Rigorous notations.
   B. Using stories.
   C. Summarizing the findings.
   D. All of the above.

Section C: Answer all questions.

1) Metaphors are commonly used to explain something that is unfamiliar or hard to grasp by way of comparison with something that is familiar and easy to grasp. Design/sketch an interface metaphor of a smart elevator that is used in the design of a faculty directory system.

(5 marks)

Answer

2) You will conduct a study on a group of doctoral students to evaluate how they use the iPhone and iPad for social and task interaction. These students are given these devices along with a suite of software developed for a period of 6 months to support their studies. Design <u>an informed consent form</u> that contains ethical protection to the users' rights.

(5 marks)

Answer

Continued...

Section D: Read the case study below and answer all questions.

An Experiment Investigating a Computer Game

For games to be successful they must engage and challenge users. Mandryk and Inkpen (2004) use physiological responses to evaluate user's experiences when playing against a friend and when playing along against the computer. The researchers conjectured that physiological indicators could be an effective way to measuring a player's experience. Specifically, they designed an experiment to evaluate the participants' experience of playing an online ice-hockey game. Ten participants who were experienced game players took part in the experiment. During the experiment, sensors were placed on the participants to collect physiological data. These include measures of the moisture produced by sweat glands in the hands and feet, and changes in heart rate and breathing rate. In addition, they videotaped participants and asked them to complete user satisfaction questionnaires at the end of the experiment. In order to reduce the effects of learning, half of the participants played against a friend and then against the computer, and the other half played against the computer first. Figure 1 shows the set-up for recording data while the participants were playing the game. Results from the user satisfaction questionnaire revealed that the mean rating on a 1-5 scale for each item indicated that playing against a friend was the favored experience (see Table 1). Data recorded from physiological responses was compared for the two conditions and in general revealed higher levels of excitement when participants played against a friend than when they played against the computer. The physiological recordings were also compared across participants and in general, indicated the same trend. Figure 2 shows a comparison for two participants.
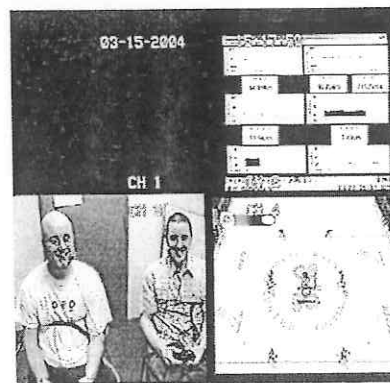

Figure 1. The display shows the physiological data (top right), two participants and a screen of the game they played.

Continued...

Table 1: Mean subjective ratings given on a user satisfaction questionnaire using a five-point scale, in which 1 is lowest and 5 is highest for the 10 players. Identifying strongly with an experience state is indicated by a higher mean. The standard deviation indicates the spread of the results around the mean. Low values indicate little variation in participants' responses, high values indicate more variation.

	Playing against computer		Playing against friend	
	Mean	St. Dev.	Mean	St. Dev.
Boring	2.3	0.949	1.7	0.949
Challenging	3.6	1.08	3.9	0.994
Easy	2.7	0.823	2.5	0.850
Engaging	3.8	0.422	4.3	0.675
Exciting	3.5	0.527	4.1	0.568
Frustrating	2.8	1.14	2.5	0.850
Fun	3.9	0.738	4.6	0.699

Source Mandryk and Inkpen (2004).
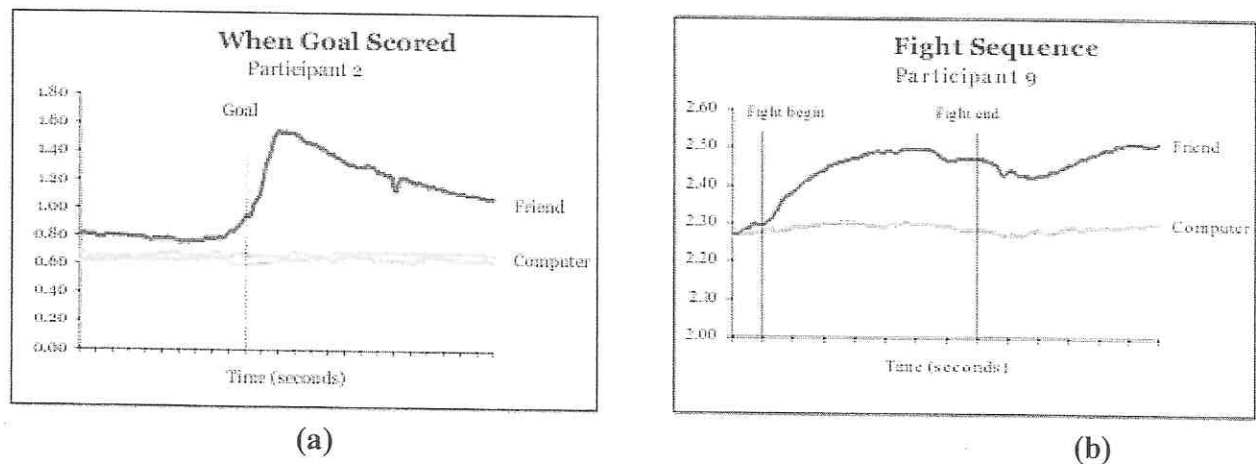

(a)   (b)

Figure 2: (a) A participant's skin responses when scoring a goal against a friend versus against the computer, and (b) another participant's responses when engaging in a hockey fight against a friend versus against the computer.

1) Identify the aim of this evaluation study.

(1 mark)

Answer

2) Identify the subjects who participate in the study.

(1 mark)

Answer

3) Identify the kind of setting used in this study.

(1 mark)

Answer

4) Identify the stage in the product lifecycle evaluation that this study takes place.

(1 mark)

Answer

5) Identify the evaluation method used in this study.

(1 mark)

Answer

Continued...

6) Identify the kind of data being collected in this study.

(1 mark)

Answer

7) Briefly describe how the data in this study are captured or coded.

(2 marks)

Answer

8) Briefly describe how the data in this study are analyzed, interpreted and presented.

(2 marks)

Answer

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